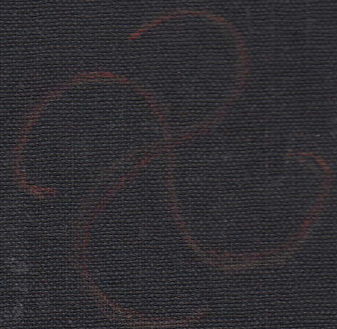


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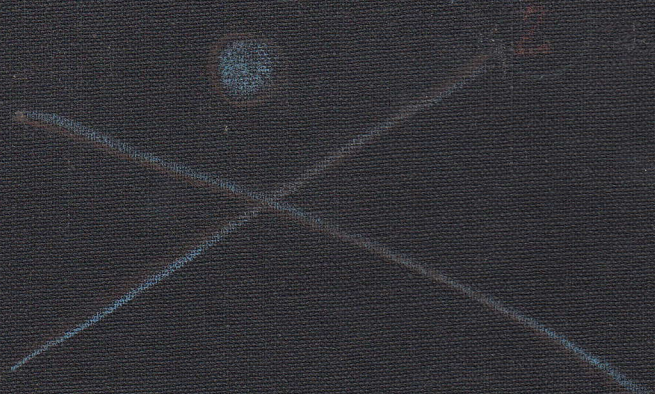


philogbook #1





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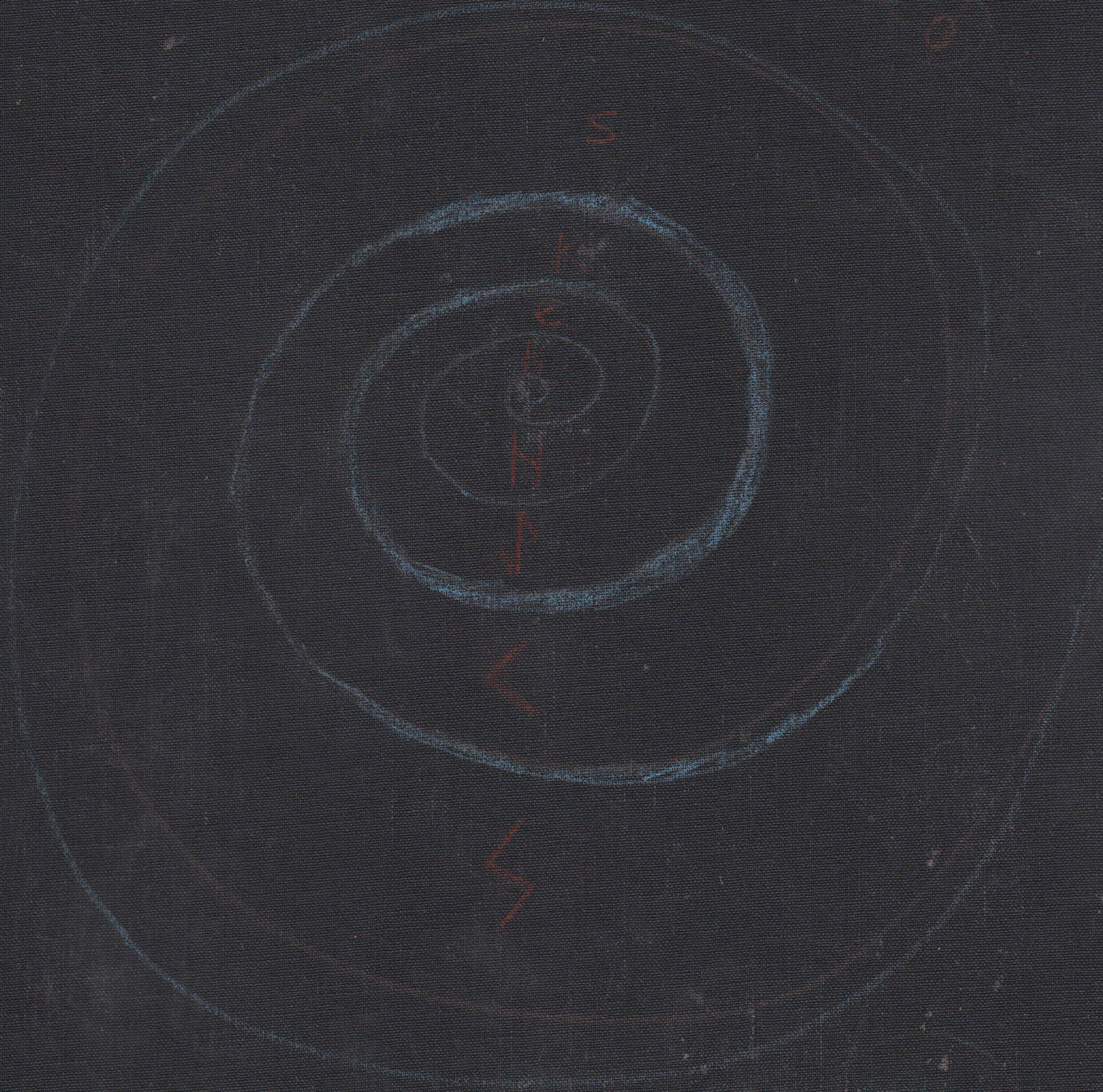
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# DIARIUM SCRATCH PAD # 77



hex<sup>2</sup><sub>0</sub>

DIARIUM 77

2003 319 = 15 November  
2003 280 = 7 October

HEX SERIES  
VOLUME

hence "hex<sup>2</sup><sub>0</sub>" is The First Volume of The Second Series of HEX.

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TEIWAZ t	BERKANA b	EHWAZ e	MANNAZ m	LAGUZ l	INGUZ ng	DAGAZ d	OTHILA o

"The Elder Futhark"



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HA

TE



espanol

greek

a	ah
b	beh
c	seh
cc	ch eh
d	deh
e	eh
f	eh'-feh
g	heh
h	ah'-ch eh
i	ee
j	ho'-tah
k	kah
l	eh'-leh
ll	eh'-yeh
m	eh'-meh
n	eh'-neh
ñ	eh'-yeh
o	oh
p	peh
q	coo
r	eh'reh
rr	eh' rreh
s	eh'-seh
t	teh
u	oo
v	veh
w	beh doh'-bleh
x	eh' kees
y	ee gree-eh'-gah
z	seh' tah

α	A	alpha	a
β	B	beta	b, v
γ	Γ	gamma	g, y, j
δ	Δ	delta	d(h)
ε	E	epsilon	e
ζ	Z	zeta	z
η	H	eta	e, ē/i
θ	Θ	theta	th
ι	I	iota	i
κ	K	kappa	k, c/k
λ	Λ	lambda	l
μ	M	mu	m
ν	N	nu	n
ξ	Ξ	xi	ks/x
ο	Ο	omicron	o
π	Π	pi	p
ρ	P	rho	r
σ	Σ	sigma	s
τ	T	tau	t
υ	Υ	upsilon	u, y/i
φ	Φ	phi	ph/f
χ	X	chi	kh, ch/h, x
ψ	Ψ	psi	ps
ω	Ω	omega	ō/o



# MATH SURVIVAL GUIDE

- Sum of the integers from 1 to  $n$ :  $S = 1 + 2 + 3 + \dots + n$

$$S = n \left( \frac{n+1}{2} \right)$$

- Sum of an arithmetic progression:

$n$  = number of terms

$a$  = first term

$d$  = common difference

$l$  = last term,  $l = a + (n-1)d$

$$S = a + (a+d) + (a+2d) + \dots + [a + (n-1)d]$$

$$S = n \left( \frac{a+l}{2} \right) = \frac{n}{2} (2a + (n-1)d)$$

- Sum of a geometric progression

$n$  = number of terms

$a$  = first term

$r$  = common ratio,  $r \neq 1$

$l$  = last term,  $l = ar^{(n-1)}$

$$S = a + ar + ar^2 + \dots + ar^{(n-1)}$$

$$S = a \left( \frac{r^n - 1}{r - 1} \right) = a \left( \frac{1 - r^n}{1 - r} \right)$$

special case: sum of the powers of  $\frac{1}{2^i}$

$$S = \sum_{k=i}^j \frac{1}{2^k} = \frac{1}{2^i} + \frac{1}{2^{i+1}} + \dots + \frac{1}{2^j}$$

$$S = \frac{2}{2^i} - \frac{1}{2^j} = (\text{twice the first minus the last})$$



ii

Sum of the Squares

$$\sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6}$$

Sum of the Cubes

$$\sum_{i=1}^n i^3 = \frac{n^2(n+1)^2}{4}$$

Sum of the Odd Numbers

$$S = 1 + 3 + 5 + \dots + (2n-1) = n^2$$

Sum of  $i * d^i$

$$\sum_{i=1}^n i d^i = \left( \frac{d}{(d-1)^2} \right) ((nd - n - 1)d^n + 1)$$

Sum of Floors of Base Two Logarithms

$$L_n = \sum_{i=1}^n \lfloor \log_2 i \rfloor = (n+1)q - 2^{(q+1)} + 2,$$

$$\text{where } q = \lfloor \log_2 (n+1) \rfloor$$

Number of Integers in the Integer Range:

$$\text{bottom} : \text{top} = \{ i \mid \text{bottom} \leq i \leq \text{top} \}$$

$$\text{top} - \text{bottom} + 1$$



The  $n^{\text{th}}$  harmonic number,  $H_n$

$$H_n = \sum_{i=1}^n \frac{1}{i} = \log_e n + \gamma + O\left(\frac{1}{n}\right),$$

where  $\gamma = 0.57721566$

### Floor and Ceiling Laws

Let  $a$  be an integer, and

Let  $x$  and  $y$  be real numbers. Then

$$\lfloor a \rfloor = \lceil a \rceil = a$$

$$\lfloor x \pm a \rfloor = \lfloor x \rfloor \pm a, \text{ and } \lceil x \pm a \rceil = \lceil x \rceil \pm a$$

$$\lfloor x \pm y \rfloor \geq \lfloor x \rfloor \pm \lfloor y \rfloor, \text{ and } \lceil x \pm y \rceil = \lceil x \rceil \pm \lceil y \rceil$$

$$-\lfloor x \rfloor = \lceil -x \rceil, \text{ and } -\lceil x \rceil = \lfloor -x \rfloor$$

if  $x \leq y$ , then  $\lfloor x \rfloor \leq \lfloor y \rfloor$   
and  $\lceil x \rceil \leq \lceil y \rceil$



## Laws for Powers and Exponents

$$X^a X^b = X^{a+b}$$

$$\frac{X^a}{X^b} = X^{a-b}$$

$$X^0 = 1, \quad X \neq 0$$

$$X^{-b} = 1 / X^b$$

$$X^{1/n} = \sqrt[n]{X}$$

$$1^a = 1, \text{ and } X^1 = X, \text{ for any } X \text{ and } a$$

$$(XY)^a = X^a Y^a$$

$$(X^a)^b = X^{ab}$$

$$(X/Y)^a = X^a / Y^a$$



## Definition of the mod operator

Let  $a$  and  $b$  be any two real numbers.

We define  $a \bmod 0 = a$ , and

if  $b \neq 0$ ,

we define  $a \bmod b = a - b \left\lfloor \frac{a}{b} \right\rfloor$

## Logarithm Laws

$$\log_b (xy) = \log_b x + \log_b y$$

$$\log_b \left( \frac{x}{y} \right) = \log_b x - \log_b y$$

$$\log_b \left( \frac{1}{x} \right) = -\log_b x$$

$$\log_b (x^n) = n \log_b x$$

$$\log_b (1) = 0$$

$$\log_b b = 1$$

$$x \mathcal{R} y \iff \log_b x \mathcal{R} \log_b y, \text{ for } \mathcal{R} \in \{=, \leq, <, >, \geq\}$$

$$\log_b x = \frac{\log_c x}{\log_c b}$$

$$\log_b c = \frac{1}{\log_c b}$$



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## Congruence Laws

A. If  $a \equiv b \pmod{m}$  and  $r \equiv s \pmod{m}$ ,  
 then  $(a \pm r) \equiv (b \pm s) \pmod{m}$   
 and  $(ar) \equiv (bs) \pmod{m}$

B. Provided  $c$  and  $m$  are relatively prime,  
 if  $ac \equiv bc \pmod{m}$   
 then  $a \equiv b \pmod{m}$

## Solution to Recurrence Relations

$$T(1) = a \quad \text{and} \quad T(n) = b + c T(n-1)$$

CONDITION  $\Rightarrow$  SOLUTION

$$c = 1 \Rightarrow T(n) = bn + (a - b)$$

$$c \neq 1 \Rightarrow T(n) = \left( \frac{a-b}{c} + \frac{b}{c-1} \right) c^n - \left( \frac{b}{c-1} \right)$$

See "TECHNOSTIC SCRIBBLINGS: Computer Algorithms Fall 200



## Solution to Recurrence Relations

$$T(1) = a \quad \text{and} \quad T(n) = bn + c + d T(n-1)$$

CONDITION  $\Rightarrow$  SOLUTION

$$d = 1 \Rightarrow T(n) = \left(\frac{b}{2}\right)n^2 + \left(\frac{b}{2} + c\right)n + (a - b - c)$$

$$d \neq 1 \Rightarrow$$

$$T(n) = \left(\frac{a-b-c}{d} + \frac{b+c}{d-1} + \frac{b}{(d-1)^2}\right)d^n - \left(\frac{b}{d-1}\right)n + \left(\frac{c - (b+c)d}{(d-1)^2}\right)$$

## Solution to Recurrence Relations

$$T(1) = a$$

$$T(n) = bn + c + d T\left(\frac{n}{p}\right), \quad \text{where } p > 1, d > 0$$

CONDITION  $\Rightarrow$  SOLUTION

$$d = p \Rightarrow T(n) = bn \log_p n + \left(a + \frac{c}{d-1}\right)n - \left(\frac{c}{d-1}\right)$$

$$d = 1 \Rightarrow T(n) = \left(\frac{bp}{p-1}\right)n + c \log_p n + \left(a - \frac{bp}{p-1}\right)$$

$$d = 1 \text{ and } b = 0 \Rightarrow T(n) = c \log_p n + a$$

$$d \neq 1 \text{ and } d \neq p \Rightarrow$$

$$T(n) = \left(a + \frac{bp}{d-p} + \frac{c}{d-1}\right)n^{\log_p d} - \left(\frac{bp}{d-p}\right)n - \left(\frac{c}{d-1}\right)$$



The sum of an Arithmetic Progression is given by the product of the number of terms ( $n$ ) times

the average of the first and last terms  $\left(\frac{a+l}{2}\right)$

in symbols,  $S = n((a+l)/2)$  see p. i

note that last term  $l = (n-1)d \therefore S = \frac{n}{2}(2a + (n-1)d)$

Number of integers in the range  $m:n = \{i \mid m \leq i \leq n\}$

The number of integers in the range bottom:top is one more than the difference (top-bottom), hence top-bottom+1

so, if range is 1:31, then  $31-1+1=31$

$$0:9 \rightarrow 9-0+1=10$$

$$0:F \rightarrow 0:15 \rightarrow 15-0+1=16$$

$$0:1 \rightarrow 1-0+1=2$$

$$49:100 \rightarrow 100-49+1=52$$

Geometric Progressions (each new term is a multiple of the previous)

$G_1: 1 \ 2 \ 4 \ 8 \ 16 \ 32 \ 64$

common ratio in Geometric progression  $G_1$  is  $r=2$

sum  $S = a + ar + ar^2 + \dots + ar^{n-1}$

$$S_1 = 1 + 1(2) + 1(2^2) + \dots + 1(2^{7-1})$$

trick:  $-S = -a + ar + ar^2 + \dots + ar^{n-1}$

$$rS = ar + ar^2 + ar^3 + \dots + ar^n$$

$$rS - S = ar^n - a$$

$$S(r-1) = a(r^n - 1)$$

$$S = a(r^n - 1)/(r - 1)$$

$$S_1 = 1 \left( \frac{2^7 - 1}{2 - 1} \right)$$



special case when  $a$  gets factored out

$$S = a + ar + ar^2 + ar^3 + \dots + ar^{n-1}$$

$$S = 1 + r + r^2 + r^3 + \dots + r^n$$

if  $S = 1 + r + r^2 + \dots + r^n$

then  $S = \frac{r^{n+1} - 1}{r - 1}$  (increasing)

or

$$S = \frac{1 - r^{n+1}}{1 - r} \quad (\text{decreasing})$$

so  $S = a + ar + ar^2 + \dots + ar^n$

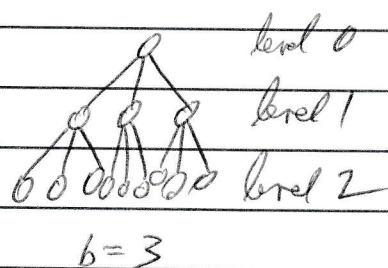
$$S = a (1 + r + r^2 + \dots + r^n)$$

$$S = a \left( \frac{r^{n+1} - 1}{r - 1} \right)$$

The power of  $r$  is always equal to the number of terms. But if you factor out  $a$ , then starting with  $r^0 = 1$ , and ending with  $r^n$ , involves  $(n+1)$  terms.

## Applications of Geometric Progressions

Balanced Tree with branching factor  $b$



$b^0$  nodes at level 0.

$b^1$  nodes at level 1.

$b^2$  nodes at level 2.

$b^l$  nodes at level  $l$ .

$$1 + b + b^2 + \dots + b^l$$

Sum of all nodes =  $\frac{b^{l+1} - 1}{b - 1}$



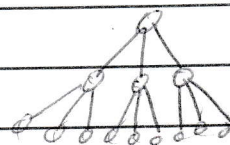
x

$$S = a(r^{n+1} - 1) / (r - 1)$$

```
int S = a;
for (i = 1; i <= n; ++i) {
    S = a + r * S;
}
```

let  $a = 1$ , let  $r = 3$ , let  $n = 2$

$$S = 1(3^3 - 1) / (3 - 1) = 26/2 = 13$$



$$1 + 3 + 9 = 13$$

~~scribbles~~

let  $a = 1$ , let  $r = 3$ , let  $n = 3$

$$S = 1(3^4 - 1) / (3 - 1) = 80/2 = 40$$

$$1 + 3 + 9 + 27 = 40 \checkmark$$

and the code?

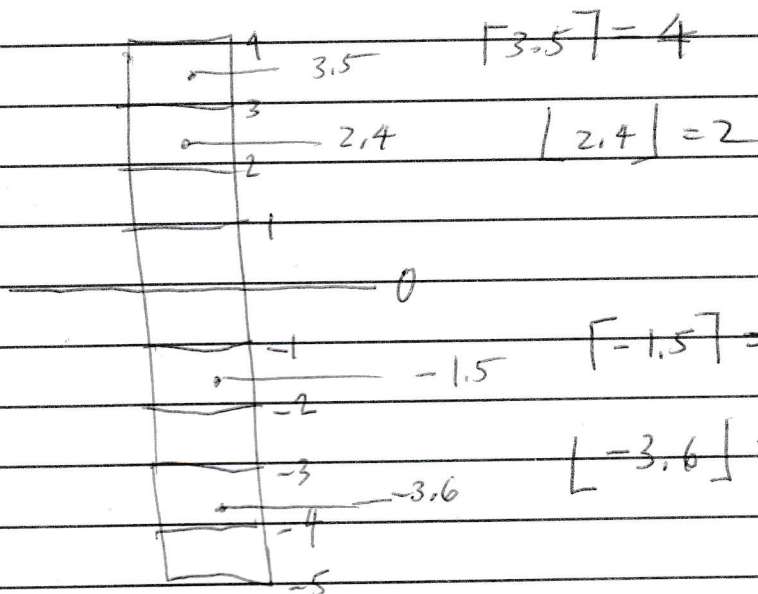
let  $a = 1$ ,  $n = 2$ ,  $r = 3$

$S = 1$ ,  $\rightarrow i = 1 \rightarrow S = 1 + 3 \times 1 = 4$   
 $\rightarrow i = 2 \rightarrow S = 1 + 3 \times 4 = 13$   
 $\rightarrow i \geq 2 \therefore S = 13 \checkmark$

TE

Floors and Ceilings

Mental Model





## Logarithms and Exponentials

$$x^a x^b = x^{a+b}$$

$$\rightarrow x^3 x^2 = x^5$$

$$2^3 \cdot 2^2 = 2^5 = 8 \cdot 4 = 32$$

$$\frac{x^a}{x^b} = x^{a-b}$$

$$\rightarrow \frac{x^3}{x^2} = x \rightarrow \frac{2^3}{2^2} = 2 = \frac{8}{4} \checkmark$$

$$x^{-b} = \frac{1}{x^b}$$

$$\rightarrow x^{-3} = \frac{1}{x^3} \rightarrow 2^{-3} = \frac{1}{2^3} = \frac{1}{8}$$

$$x^{1/n} = \sqrt[n]{x}$$

$$\rightarrow x^{1/4} = \sqrt[4]{x} \rightarrow 16^{1/4} = \sqrt[4]{16} = 2$$

see Laws on page iv

Logarithms are exponents, in the following sense.

The base- $b$  logarithm of  $x$ , denoted  $\log_b x$  is the power to which the base  $b$  must be raised to equal  $x$ . In symbols, if  $y = \log_b x$ , then  $b^y = x$ .

This is the same as asserting  $b^{\log_b x} = x$ ,

$$\text{as in } 10^{\log_{10} 100} = 100$$

$$10^2 = 100,$$

$$\text{so } 2 = \log_{10} 100,$$

$$\text{and } 10^{\log_{10} 100} = 100$$

$$\text{because } \log_{10} 100 = 2$$

The base  $b$  of a logarithm is always greater than 1.

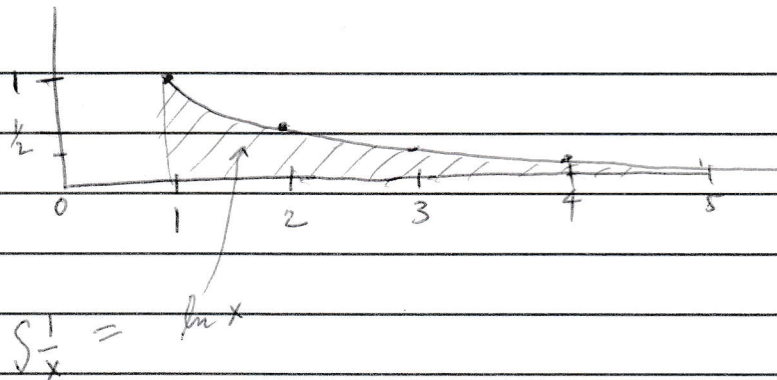
Popular bases in scientific work: 10 and  $e$ ,  
where  $e \approx 2.718281828$ .

$\log_e x$  is written as  $\ln x$ , where  $\ln \rightarrow$  "natural logarithm"

Natural logarithms arise in Calculus, because when you calculate the area under the curve  $y = 1/x$  starting at 1 and ending at  $x$ , you get  $\ln x$ . ( $\log_e x$ )  
This is the "NATURAL WAY" to define the logarithm.



$$y = 1/x$$



$$S_{\frac{1}{x}} = \ln x$$

In computer science, we frequently use base 2 logarithms hence  $\log_2 x$  is often written as  $\lg x$ .

The most important law for logarithms is that the logarithm of a product  $x \cdot y$  is the sum of the logarithms of  $x$  and of  $y$ .

$$\log_b (x \cdot y) = \log_b x + \log_b y.$$

Proof  $b^{\log_b x + \log_b y} = b^{\log_b x} \cdot b^{\log_b y} = x \cdot y$

$\log_b (x \cdot y)$  is just the power to which base  $b$  must be raised to be equal  $x \cdot y$ ,  
so we also have  $x \cdot y = b^{\log_b x \cdot y}$

Hence, the sum  $\log_b x + \log_b y$  add up to a power  $p$  where  $p = \log_b (x \cdot y)$ , and for which the base  $b$  raised to this power  $p$  equals the product  $x \cdot y$ , namely  $b^p = x \cdot y$

Therefore, the logarithm of the product  $x \cdot y$  must be identical to the sum of the individual logarithms of  $x$  and  $y$ .

It follows that  $\log_b (x \cdot x) = 2 \log_b x$  and  $\log_b (x^n) = n \log_b x$



~~This~~ This works when  $n$  is any real number:

since  $x^{-1} = 1/x$ ,  $\log_b(1/x) = -\log_b x$   
 See page v for other logarithmic laws.

Changing bases:  $b^{\log_b x} = x$

$\log_b x \Rightarrow$  "what I have to raise  $b$  to in order to get  $x$ "

$$\therefore \textcircled{b^{\log_b x}} = \textcircled{x}$$

take base- $c$  logarithm of both sides

$$\log_c(b^{\log_b x}) = \log_c x$$

$$(\log_b x)(\log_c b) = \log_c x$$

$$\log_b x = \frac{\log_c x}{\log_c b} \quad \therefore \log_b c = \frac{1}{\log_c b}$$

e.g.  $\log_2 x = \frac{\log_e x}{\log_e 2}$

Applications to inequalities:

$$\log_2(n+1) < \log_2 n + 1$$

if  $a < b$ , then  ~~$\log_2 a$~~   ~~$\log_2 b$~~   $2^a < 2^b$

when  $a = \log_2(n+1)$  and  $b = \log_2 n + 1$ ,

$$2^{\log_2(n+1)} < 2^{\log_2 n + 1} \quad \text{when } n > 1$$

$$2^{\log_2(n+1)} = n+1 \quad \text{also } 2^{\log_2 n + 1} = 2^{\log_2 n} \cdot 2^1 = 2n$$

$$\therefore (n+1) < 2n \quad \text{when } n > 1.$$



Subtracting  $n$  from both sides of  $(n+1) < 2n$  when  $n > 1$

$$1 < n \text{ when } n > 1$$

reverse backward reasoning:

$$(n > 1) \Leftrightarrow (1 < n) \Leftrightarrow (n+1) < 2n \Leftrightarrow \log_2(n+1) < \log_2(2n) \\ \Leftrightarrow \log_2(n+1) < \log_2 2 + \log_2 n$$

$$\Leftrightarrow \log_2(n+1) < \log_2 n + 1$$

## MODULAR ARITHMETIC

When we divide  $a$  by  $b$ , we get a quotient  $q$  and a remainder  $r$ .  
 $a = bq + r$ , where  $(0 \leq r < b)$

Thus, we abstract the relation between QUOTIENTS and REMAINDERS.

When  $r = 0$ , we say  $b$  divides evenly into  $a$ , and we write  $b \mid a$ .  
"b divides a".

Take divisor 7. Perform a new form of arithmetic in which we will agree to confine ourselves always to use "remainders after division by 7".

We use only the numbers 0 to 6.

If division is  $n$ , we use only numbers 0 to  $(n-1)$ .  
Remainders after division by  $X$  are forced to lie in the range  $0:(X-1)$ .

When we add or multiply 2 numbers in the range  $0:b$ , and we get a new number outside the range  $0:b$ , we reduce it to be a number back in the range  $0:b$ , by replacing it with its remainder after division by 7.

This is called REDUCING A NUMBER MODULO 7.

Here, 7 is called THE MODULUS.



$4 * 5 = 20$ , but 20 is outside range  $0:6$ , so we divide 20 by 7, getting a quotient of 2 and a remainder of 6. We throw away the quotient and keep the remainder as the result.

Hence 4 times 5 equals 6 modulo 7:

$$4 * 5 \equiv 6 \pmod{7}$$

Using the concept of inverses, we can define subtraction and division.

If we know  $a + b = c$ , then we can define  $c - b = a$ .

Thus if  $3 + 5 = 1 \pmod{7}$ , then  $1 - 5 = 3 \pmod{7}$ .

Notice the "wrap around" arithmetic principle.

$1 - 5 = -4$  using ordinary arithmetic.

But what is the remainder of  $-4$  after division by 7?

We wrap it around to be an appropriate number in the range  $0:6$ .

Use  $a = bq + r$

$$-4 = 7(-1) + 3, \text{ where } q = -1 \text{ and } r = 3.$$

We need to know about modular arithmetic in the study of data structures is because it comes up when we try to create tables having a limited range of table indexes, for which we want to make sure that indexes into the table are kept in the appropriate range.

For this purpose we often use wrap around arithmetic in which if we add (or subtract) a constant to a table index and get a new index that falls off one end of the table, we wrap it around so it falls back inside the table starting at the opposite end.

Such as hash table represented by an array  $T[0:M-1]$  with entries  $T[i]$ , where the table index  $i$  falls in the range  $0 \leq i < M$ .

When we add a displacement  $c$  to  $i$ , getting  $i+c$ , to move from entry  $T[i]$  to entry  $T[i+c]$ , it may happen that  $i+c \geq M$ . In this case we wrap around by computing a new index,  $j = (i+c) - M$ , and we access the wrap around entry  $T[j]$ . Here,  $j$  is the remainder of  $(i+c)$  after division by  $M$ .



We are using modular arithmetic to keep table indexes inside the proper index range  $0:M-1$ .

Definition of binary operator mod:

Let  $a$  and  $b$  be any two real numbers.

We define  $a \bmod 0 = a$ , and if  $b \neq 0$ ,

we define  $a \bmod b = a - b \lfloor a/b \rfloor$

example:  $a = 23$ ,  $b = 5$ ,  $a/b = 23/5 = 4.6$

$\therefore \lfloor 4.6 \rfloor = 4$

Hence,  $a \bmod b = 23 \bmod 5 = 23 - 5 \lfloor 23/5 \rfloor$   
 $= 23 - 5 * 4 = 23 - 20 = 3$

thus, the mod operator gives the same result as "keeping the remainder after dividing  $a$  by the divisor  $b$ ".

In C, if  $a$  and  $b$  are integers, the syntax for  $a \bmod b$  is  $a \% b$ .

Note that, if  $a$  is a real number,  $(a \bmod 1)$  yields the fractional part of  $a$ :  $a \bmod 1 = a - 1 \lfloor a/1 \rfloor$   
 $= a - \lfloor a \rfloor$

So, for data structures (tables), we only need to consider integers of the form  $(i \bmod M)$  in order to maintain index values in the range  $0:M-1$ .

So, what does it mean for 2 integers to be "CONGRUENT MODULO  $m$ "?

(also known as a CONGRUENCE RELATION between the integers  $a$  and  $b$ ).



We say that  $a \equiv b \pmod{m}$  if and only if  
 $(a \bmod m) = (b \bmod m)$

We pronounce " $a \equiv b \pmod{m}$ " as  
 "a is congruent to b modulo m".

manipulation laws to remember:

if  $a \equiv b \pmod{m}$  and  $r \equiv s \pmod{m}$   
 then  $(a \pm r) \equiv (b \pm s) \pmod{m}$   
 and  $(ar) \equiv (bs) \pmod{m}$

Before next law, recall what it means for 2 integers to be relatively prime to one another.

We say  $m$  and  $n$  are relatively prime if they have no common divisors other than 1.

In order to get a division law for congruences, we need to focus on the special case when the quantity,  $c$ , that we are dividing out, is relatively prime to the modulus  $m$ . Otherwise, division may be invalid.

Provided  $c$  and  $m$  are relatively prime,  
 if  $ac \equiv bc \pmod{m}$   
 then  $a \equiv b \pmod{m}$

So, addition, subtraction, and multiplication work modulo  $m$ , but you can divide out a factor,  $c$ , modulo  $m$ , only if  $c$  and  $m$  have no common divisors themselves.



# What is a gort? (FILE: GORT BUSTERS FAQ)

short answer:

a gort is someone who believes that  
"That which is so, is so."

long answer:

The generic term "gort" springs from the colloquialisms of the greater Baltimore area, where, when someone is perceived to be a sucker, he is considered a gort. Whether this term is still used there today is beyond my measure. However, a Baltimorean once recounted to me the story of a guy who bought a used car from a dealer, and, when it wouldn't start, he helped the salesman push it off the lot. Brothers and sisters, that is a gort!

Nevertheless, the purpose of this website (URL → <http://www.gortbusters.org>) is hardly to be the repository of stories about hopelessly pathetic gorts and the misdeeds that make them funny. While there will be plenty of that, we have a more serious purpose and, we humbly submit, a higher calling. So let's get down to the real business of defining a gort as it should be known here at Gortbusters.

Essentially, a gort is someone who has missed the bottom line in human consciousness. There is a point beyond which one may not be using one's brain to the full extent necessary to qualify for a membership card to the human race.



The question is not who are these people, for I imagine we are all quite well acquainted with these folks in our own lives and in our society and even in the world generally.

The question, rather, is how to define that point of demarcation where the dividing line between the human and the gort is distinct.

After much study and consideration, we here at Gortbusters believe that that line begins with a conscious realization of dualism. Yes, that's right... TWOness, the split, the crack, the break in the cosmic dam through which floods the reality of our ability to think. Experiencing consciousness means experiencing duality, that is, the truism that everything I see I know must be processed one way or the other.

There is no up without down, no cold without hot, no man without woman, no left without right, no old without new, no power without virtue, no life without death, no reality without illusion. Every sword has two edges. Only when one is aware of this, may one proceed to the next consideration.

Of course, the next consideration is, "Well, who would NOT understand this?" The answer, of course, is the gort. The Great Bard, Shakespeare, captures the delicious irony of duality when he writes, "Nothing that is so, is so."



This is like the endless images of two mirrors facing each other, each playing off the reflection of the other.

The gort does NOT understand this.

In fact, to paraphrase Shakespeare, the gort believes, "That which is so, is so." He believes that perception equals reality. Therein lies the danger.

Before going any further, it behooves us to clarify an issue regarding who is the most dangerous gort of all.

Fortunately, this question is easily dispensed with. For you guys, just look in the mirror while shaving.

The beady-eyed snickering creature staring back at you is the most dangerous gort. Ladies, you may see her as you comb your hair and apply your lipstick.

Yes, of course, the most dangerous gort of all is the small-minded, self-serving, illusion-embracing part of ourselves, which is dedicated to the status quo, frightened to death of change, and in denial regarding what price must be paid for fully human powers of perception.

As we rail and rant, sweat and cry, bleed and heal on this website, let us never forget the first responsibility we have, which is to recognize the gort inside.



ourselves, and to insure that it will never take control of the human consciousness control panel in the brain's command center.

We owe this, not only to ourselves, but to our families and to posterity itself. There IS a tradition of human awareness in the history and evolution of our species.

Let us be part of it.



turn 2002 debut  
ce .



español

Alguna gente oye sus propias voces internas con gran claridad, y ella vive por lo que ella oye. Tal gente hace loca pero ella hace leyendas.

Some people hear their own inner voices with great clearness, and they live by what they hear. Such people become crazy, but they become legends.

some words and their pronunciations.

la ~~biblioteca~~ biblioteca (bib lee o tek ah) [library]  
el amigo / la amiga [friend]

el cuaderno (kwa der no) notebook

la clase (klah say) class

el diccionario (dik see o nar eeo) dictionary

el dinero (dee ner oh) money

el español (es-panyohl) Spanish

el/la estudiante (estoo dee ahn tay) student

el escritorio (eskree tor eeo) desk

la escuela (esk way la) school

la hora (or-a) hour

el inglés (eeng layss) English

el lápiz (la peess) pencil

la pluma (plooma) pen

el libro (lee bro) book

las matemáticas (mat ay mat ee kas) math

la página (pa ghee na) page

el papel (pah pel) paper

el reloj (ray ~~lay~~ lojh) clock, watch

el tiempo (tee empo) time

la universidad (oo nee ber see dahd)  
universidad



## some verbs

amar to love

escuchar es koo char to listen

estudiar es too dee ar to study

hablar ah blar to speak

llamar yah mar to call

necesitar neh seh see tar to need

regresar reh greh sar to return

trabajar trah bah jhar to work

Note numbers between are all math problems

10 diez

11 once

14 catorce

15 quince → "KINGS SAY"

16 : diez y seis = dieciseis

17 : diez y siete = diecisiete

18 : diez y ocho = dieciocho

19 : diez y nueve = diecinueve

20 veinte "Beh-eeh tee"

Here's some English words that can be used as Spanish

el bar, el breaktime, el CD, el cash,  
el cassette, el closet, el computer, el income tax,  
el manager, la microwave, la movie,  
la party, la pizza, el record,

el stress, el supermarket, la TV, el VCR

la IBM, los Pampers, la Budweiser, -c-



## The Big 5 sounds:

5

a (ah) yacht  
e (eh) meet  
i (ee) keep  
o (oh) open  
u (oo) spoon

## The Other Sounds:

c<sub>1</sub> cat  
c<sub>2</sub> celery (ce, ci)  
g<sub>1</sub> go  
g<sub>2</sub> h hello (ge, gi)  
h silent like k in knife

j (h) hot  
ll (y) yes

ñ (ny) canyon  
qu (K) kiss  
v (b) break  
z (s) sit

## Pronunciation details:

If no accent, say last part loudest español

If ending in a, e, i, o, u,

the "second to last part of the word is emphasized": enchilada

rr → "roll the R's"

d sometimes sounds like th (this) in the middle and at the end of words. Try it: nada, todo, adios

Rules make it worse — so forget 'em.



Some very easy Spanish words

aplicación, beisbol, café, comercial, conversación,  
escuela, especial, estúpido, familia, fantástico,  
favorito, fotografía, importancia, inteligente,  
interesante, limón, millonario,  
minuto, momento, nervioso, noviembre,  
operación, persona, policía, posesión, posible,  
refrigerador, teléfono, televisión,  
turismo, universidad, vacación,  
vocabulario;

same as English: banana, chocolate, idea, doctor,  
individual, natural

other easy words to remember:

diccionario, dieta, dólar, eléctrico,  
elegante, información, instrumento, moderno,  
música, producto, profesional, sexo,  
programa, presidente, reservación,  
sincero, violento, restaurante

y = and

o = or

pero = but

señor	Sr.	Mr.
señora	Sra.	Mrs.
señorita	Srta.	Miss.



# First Words → Palabras

These seem to be the first words acquired in any language:

WATER	agua
FRIEND	amigo
BATHROOM	baño (banyo)
GOOD	bueno
CAR	carro
HOUSE	casa
FOOD	comida (ko mee thah)
MONEY	dinero
BIG	grande
MAN	hombre
MORE	más
A LOT	mucho
WOMEN	mujer
VERY WELL	muy bien
CHILD	niño
NAME	nombre
NUMBER	<del>nummero</del>
PERSON	persona
PHONE	teléfono
WORK	trabajo
PLEASE	por favor
THANKS	gracias
HI	hola
BYE	adiós



Here are some words that work all by themselves:

algo → SOMETHING

alguien → SOMEONE

ahora mismo or ahorita → RIGHT NOW

después → AFTERWARDS

los demás → the rest of them

~~ninguno~~

NINGUNO : none of them

ANTES : before

Kwalk'ee erah

CUALQUIERA : any of them

mee-entrabs

MIENTRAS : during

en tōnsez

ENTONCES : then

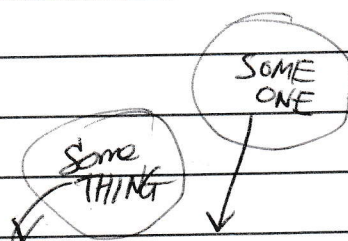
CADA UNO : each one

AMBOS : both of them

YA : already

ALGUNOS : some

compare ALGO, ALGUIEN



DEMASIADO : too much

OTRA : another

OTRA VEZ : again

CASI : almost

JUNTOS : together

SOLO : alone

TODO : all of it

NADIE : no one

/ NAH-dee-eh /

VARIOS : several

NADA : nothing

SIGUIENTE : the next one

MISMO : the same

DIFERENTE : different

PRIMERO : first

ÚLTIMO : last

"EN TODAS PARTES"  
(everywhere)

Buenos días

Buenas tardes

Buenas noches



"Hello?" : ¿Aló?, ¿Bueno?, ¿Diga?

"Who's calling?" : ¿De parte de quién?

"Thanks!" : instead of muchas gracias for "Thanks alot",

¡Muchísimas gracias!

¡Mil gracias! or ¡Muy amable!

(ah mahb leh)

Por favor is "please". De nada is "your welcome".  
Lo siento is "I'm sorry."

Nati, Lo siento.

To get through a crowd : "Excuse me!"

¡Con permiso!

If you cough or sneeze : ¡Perdón!

To get someone's attention : ¡Disculpe!

¡Pase! → "Go ahead"

¡SALUD! → "Bless you".

¿Qué pasa? vs ¿Cómo está usted?

"What's happening?" vs "How are you?"

"Nice to meet you!" → "Mucho gusto!"

"Same to you!" → "IGUALMENTE!"

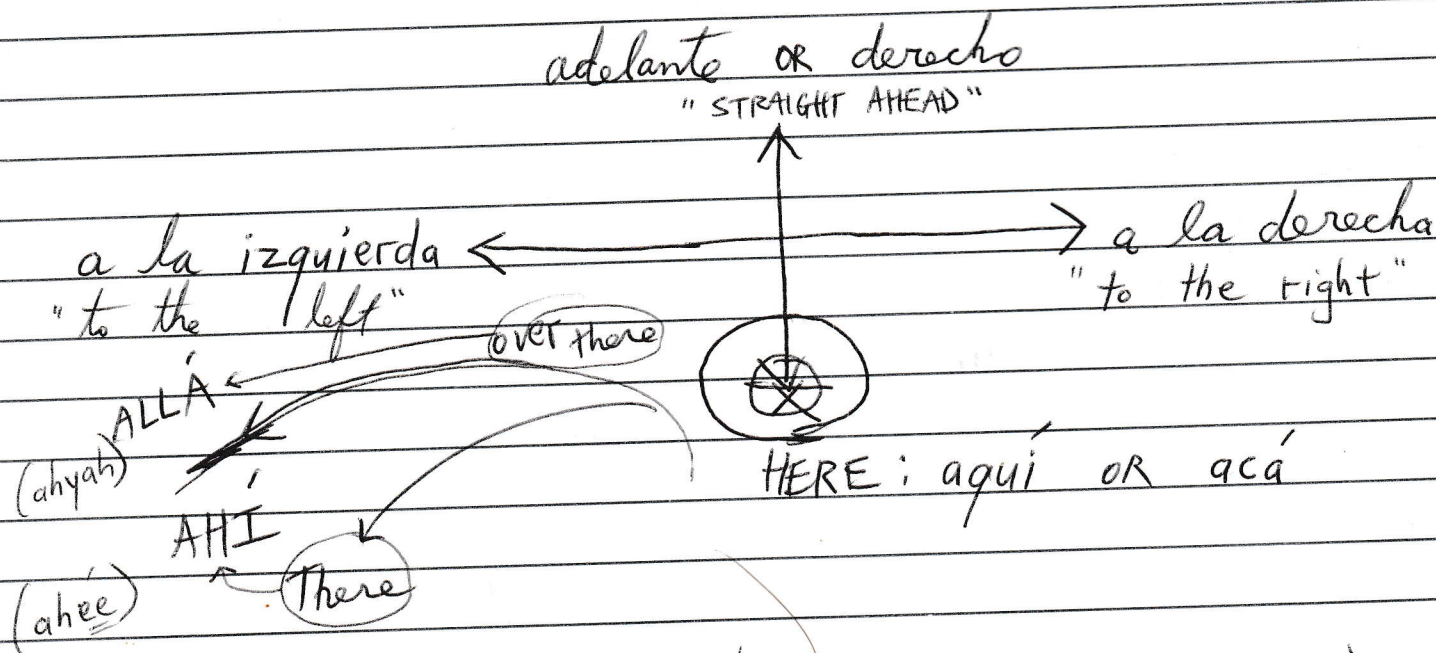
(eegwaul menteh)

CÓMO SE LLAMA? (What's your name?)

ME LLAMO MIKE.



¿Dónde está? → Where is it?



### Los números (The Numbers)

- 0 cero
- 1 uno
- 2 dos
- 3 tres
- 4 cuatro
- 5 cinco
- 6 seis
- 7 siete
- 8 ocho
- 9 nueve

### Los colores (The colors)

- NEGRO → black
- BAZUL → blue
- CAFÉ → brown
- GRIS → gray
- VERDE → green
- ANARANJADO → orange
- MORADO → purple
- ROJO → red
- BLANCO → white
- AMARILLO → yellow

chair → la silla, table → tabla, la mesa  
triste → sad

My número de teléfono es siete-tres-dos 732  
cuatro-tres-uno 431

siete-seis-nueve-nueve 7699

Me gusta el color azul.



Hay algunas de color anaranjado.  
There are some orange ones.

el & la refer to one person, animal, or thing  
"> 1"  $\Rightarrow$  use los & las ~~los~~

How to say "a" or "an" instead of "the":  
UN                  UNA

UNOS & UNAS  $\rightarrow$  "some"

This aspect of español is confusing. Be patient.

LA

el = "the"

la = "the"

él = "he"

ella = "she"

-a

-sión

-tad

-ción

-dad

-umbre

-ambre

búsqueda

BOO SKETHAH

Search

A very good way to learn a new language is to speak in short, meaningful phrases. This goes for computer programming "languages" as well as natural languages. Write a "hello world" program to try out a computer for a language NEW to YOU - not necessarily a new language. Likewise, in SPEAKING SPANISH, instead of struggling with the formation of correct long sentences, expressive one liners can be used.



Many times there is really nothing left to say -

¡Por supuesto! Of course!

Quizás → Maybe

Buena idea → Good idea.



~~ee-deh~~

ee-deh-ah



aye-dee-~~ah~~ ah

AMADEUS ... ee-de-a → idea

SPANISH SOUNDS LIKE ENGLISH

A

ah

E

eh

I

ee

e

O

o

o

U

oo

Yo también → me too

Me alegro → I'm so glad.

Es verdad → That's the truth.

¡Ojalá! I hope so!

Yo tampoco → me neither

Más o menos → "more or less"

Yo veo → I see.

¿Esta bien? → Is that OK?

CREO QUE SÍ → I THINK SO.

¿Quién sabe? → Who knows?

¿Está seguro(a) → Are you (he/she) sure?



Así → "like this"  
 ¿Como no? → Why not?  
 Es posible → It's possible.  
 ¡Claro! → sure!

búsqueda : BOO SKEH THAH → search  
 buscar  
 Indo-European root for search → ker, ⇒ (s)ker (b)

lend, turn, "move around"  
 turning back and forth in plowing

Greek → khukhlos : circle (cycle),  
 (en)cyclop(a)edia : circle of knowledge

paideia : education, from pais, paid :  
 child.  
 an encyclopedic mind

encyclical : papal letter for general circulation.

In ancient Greece, the Cyclops, plural Cyclopes,  
 with ONE, ROUND EYE.

In the United States, the "circle" of the ~~Kl~~ Ku Klux Klan.

CYCLADES : a roughly circular cluster of Greek islands,  
 some 220, around Rebs, where Apollo and  
 Artemis were born.

CYCLOBOTHRRA : genus of lilies.  
 CYCLONIUM : genus of fungi



More "One-a-day" one liners

I love her like a sister.

! Lo que (usted) quiera! → "Whatever you want."

De acuerdo → I agree

Sin duda → No doubt

Tanto mejor → all the better.

Depende → That depends.

Con razón → No wonder.

A lo contrario → On the contrary

Está bueno → That's good.

Ya me voy → I'm leaving now.

Ya se fue → He/She has left.

Ahora vengo → I'll be right back.

Ahí viene → Here he/she comes.

¿Listo? → "Ready?"

la lista → the list

un lista → a list

creo que sí → i think so

No entiendo OR No comprendo → I don't understand

A la vez. → At the same time.

Muchas veces. → Lots of times.

Una vez. → One time.

No sé. → I don't know.

Todavía no → Not yet.

Ahora no. → Not now.

En punto. → On time.

Al revés. → Backwards.

Boca abajo. → Upside down.

/Tō-THAH BEE AH/



## EMOCIÓN

¡Socorro! → Help! ; Caramba → wow

Dios mío → For heaven's sake.

Mentiras → Lies ; Basta → Enough

Vaya → Go on ; Vámonos → Let's go.

Buena suerte → Good luck

Es muy... [It's very...]

cierto certain

correcto correct

fantástico fantastic

importante important

interesante interesting

necesario necessary

obvio obvious

terrible terrible

¡Qué... [How]

barbaridad How awful.

bueno How great.

Que chiste! What a joke.

Que disfrute. Have a good time

Qué extraño How strange

¡Qué lastima! What a shame!

Que le vaya bien. Take care.

Que se alivie. Get well.

Que suerte. What luck.

Qué importa! So what!

Que triste. How sad.

Que va. Pshaw, go on.



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Memorize the SOUNDS. Speak. Practice accents.

ADVANCED: Por eso → Therefore  
O sea → In other words  
Además → Besides,  
Por fin. → At last

Por ejemplo → For example.

Sobre todo → Above all.

Sin embargo → However

A propósito. → By the way.

Al principio → At first,

Por lo ~~men~~ menos. → At least,

Según → according to

En general → In general

Paso a paso → Step by step

Poco a poco → Little by little.

¿Mi carro? En general, mi carro es excelente.

Por ejemplo, el color es perfecto.

Además, es muy grande.

Sin embargo, el motor no es bueno.

¿Mi carro? No sé.



# PREGUNTAS en español

¿Cuál?	What/Which?
¿Cómo?	How?
¿Qué?	What?
¿Por qué?	Why?
¿Dónde?	Where?
¿Cuánto?	How much?
¿Cuántos?	How many?
¿Cuándo?	When?
¿Quién?	Who?

Primer nombre → first name

Apellido materna → mom's

Apellido materno → dad's

All alone, ¿Cómo? means "What?"  
or "How's that?"

¿Cómo se dice? "How do you say it?"

¿Cómo se escribe? "How do you write it?"

¿Cómo está? How are you

¿Qué? always means "What?"  
as in ¿Qué pasa?

¿Qué es esto? What's this?

¿Qué es eso? What's that?

¿Qué son? Who are they?

¿Que significa? What does it mean?

¿Qué hora es? What time is it?



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¿Dónde? ¿Dónde está \_\_\_\_\_? (Where is \_\_\_\_\_?)

¿Dónde vive? Where do you live?

¿Dónde trabaja? Where do you work?

¿Adónde va? Where are you going?

¿De dónde es? Where are you from?

¿Cuánto(a)? How much?

¿Cuántos (as)? How many?

¿Cuántos años tiene? How old are you?

¿Cuánto tiempo? How much time?

¿Cuánto cuesta? How much does it cost?

¿Quién? Who?

¿Quién es? Who is it?

¿A quién?... To whom...?

¿Para quién? For whom?

¿De quién? From whom?

¿Cuándo? When?

¿Cuándo empieza? When does it begin?

¿Cuándo termina? When does it end?

¿Cuándo llega? When does it arrive?

¿Cuándo sale? When does it leave?

¿Cuándo nació usted? When were you born?

eg: ¿Cuándo llega usted? AYER = Yesterday, HOY = Today  
MAÑANA = tomorrow



Who's Who?

Quién preguntas:

Use these words as you would their English equivalents.

Yo → I

Usted → You

Ella → She

Él → He

Ellos → They

note: Ellas → They, fem

Ustedes → You guys

Nosotras → We, fem

Nosotros → We

Los libros, ¿Dónde están ellos?

The books, where are they?

Posesión: mi amigo, su amigo, nuestro amigo  
↳ (their, yours, his, or her)

More than one: mis amigos  
sus amigos  
nuestros amigos.

¿De quién es? (Who is it?)

If someone (or something) "belongs to" someone else,  
use de (of/from) to tell who the person is.

It's Nati's friend ⇒ Es el amigo de Nati.

THE POSESIÓN PRINCIPLES:

- Don't forget the el and the la for "THE" (él is he)
- "Nuestra amiga" ⇒ Our friend.



- Don't get possessive words (adjectives) mixed up with  
quién words (pronouns). Yo tengo mi carro.  
I have my car.

Try these possessives once in awhile:

Es                      mío                      MINE  
(IT IS)                      suyo                      yours, his, hers, theirs

[illegible]

el ? his

Sometimes we can drop the queen word:

ella ? her's

Yo estoy bien → Estoy bien.

ellos? theirs

ellay ? Theirs

A very important Spanish word is *fu*

ustedes ? Yours

tu means the same as usted, you.

usted → used to address someone with respect.

tú is informal, and is used with friends

THE REVERSAL RULE: Sometimes in Spanish, an English speaker has to THINK BACKWARDS.

If you want to describe something, just reverse the order of the describing word and that of what's being described.

ALOT OF GOOD TACOS.

ALOT OF TACOS GOOD

Muchos tacos buenos.

¡ AHORA NO!

Not now!

Spanish first tells what is possessed,  
then tells who possesses.

Nati's house.

La casa de Nati.

I like coffee. Me gusta el café.

El café me gusta.



## THE SUPER PREGUNTAS SURVIVAL QUESTIONS

¿Le gusta? Do you like it?

¿Entiende? Do you understand?

¿Quisiera? Would you (he, she) some?

¿Hay? "Is there?" OR "Are there any?"

¿Por qué? Why?

Porque, without the accent, is BECAUSE.

¿Quiere? Do you want it?

¿Tiene? Do you have some?

¿Puede? Can you (he, she) do it?

¿Qué es esto? What is this?

¿Cómo se dice? How do you say it?

¿Qué significa? What does it mean?

Sometimes your Spanish speaking friends may have to write it down.

¿Cómo se escribe? How do you write it?

¿Cómo se deletrea? How do you spell it?

"Letra por letra, por favor." (Letter by letter, please).



TIP

SPELL EVERYTHING ALOUD in Spanish, Practice spelling orally.  
Try teaching inglés words to a Spanish-speaking person.  
You will then be FORCED TO SPELL.

"ll" and "ch" have been officially cut from el alfabeto español, but people still refer to them when spelling out a word.

① a (ah), e (eh), i (ee), o (oh), u (oo)

② Letters "close" to English

b (beh "larga" or "grande")	n (eh'-neh)
v (veh "costa" or "chica")	p (peh)
c (seh)	q (coo)
d (deh)	r (eh'-reh)
f (eh'-feh)	s (eh'-seh)
k (kah)	t (teh)
h (ah'-ch eh)	w (beh doh'-bleh)
l (eh'-leh)	x (eh'-kees)
m (eh'-meh)	

③ Most gringos have problems with g, j, y, z

g (heh), j (ho'-tah)

y (ee-gree-eh'-gah), z (seh'-tah)

④ El alfabeto has 4 more "letters" than the alphabet.

ch (ch eh)  
ll (eh'-yeh)  
rr (eh'-rreh)  
ñ (en'-yeh)

⑤ a, b, c, ch, d, e, f, g,  
h, i, j, k, l, ll, m,  
n, ñ, o, p, q, r, rr,  
s, t, u, v, w, x, y, z.



¿Cuál es su...

What is your...

número de teléfono (phone number) ?

número de seguro social (social security number) ?

número de licencia de chofer (driver's license number) ?

domicilio or dirección (address) ?

código postal (zip code) ?

código de área (area code) ?

número de póliza (policy number) ?

número de placa (license plate number) ?

número de tarjeta de crédito (credit card number) ?

número de facsímile (fax number) ?

correo electrónico (E-mail address) ?

PRACTICE ALOUD and KEEP IT FUN!

uno dos tres cuatro ~~cinco~~ cinco seis siete ocho nueve  
1 2 3 4 5 6 7 8 9

10 ~~diez~~ diez

11 once

20 veinte

12 doce

13 trece

14 catorce

15 quince

(10) diez y (6) seis = (16) dieciséis

(10) diez y (7) siete = (17) diecisiete

(18) dieciocho , (19) diecinueve



These multiples of 10 all end in -nta

30	treinta	(3 → tres)
40	cuarenta	(4 → cuatro)
50	cincuenta	(5 → cinco)
60	sesenta	(6 → seis)
70	setenta	(7 → siete)
80	ochenta	(8 → ocho)
90	noventa	(9 → nueve)

The numbers in between are all math problems:

(20) veinte y uno (1) = (21) veintiuno  
 veinte y dos = (22) veintidós  
 veinte y tres = (23) veintitrés

100 → cien (like "century")

101 → ciento (+) uno

201 → doscientos (+) uno

1000 → mil

2000 → dos mil

Order up:

1 <sup>st</sup>	Primera, -o
2 <sup>nd</sup>	Segunda, -o
3 <sup>rd</sup>	tercera, -o
4 <sup>th</sup>	cuarta, -o
5 <sup>th</sup>	quinta, -o
6 <sup>th</sup>	sexta, -o
7 <sup>th</sup>	séptima, -o
8 <sup>th</sup>	octava, -o
9 <sup>th</sup>	novena, -o
10 <sup>th</sup>	décima, -o



"¿Qué hora es?" What time is it?

¿Qué horas son? (same thing ↑)

reloj (watch or clock) : say hora followed by the minutos.

6:15 → "seis, quince"

NOTE: half-past → media

6:30 → "seis y media"

If 1-1:59, use Es la...

else 2-23:59 use Son las...

"... in the morning" → de la mañana

"... in the afternoon" → de la tarde

"... in the evening" → de la noche

NOON → mediodía

Midnight → medianoche

If you want to say "At (a certain time)",  
say "A las"

Tiempo means "time, in general"

En punto means "on the dot"

Segundos are "seconds"

¿Tiene hora? (Have you got the time?)

↑ 12 1 Es la una (en punto).  
↓

6:15 → Son las seis y cuarto.

9:55 → Son las ~~diez~~ diez menos cinco

Some Latin American countries use expressions like  
es un cuarto par las seis (5:45)



7:50 → 10 to 8 → Son diez para las ocho.

See? 8PM → Son las ocho.

8:40 → Son veinte para las nueve.

SON 20 para las 9.  
 minutes before the hour we are approaching.

## Los días de la semana (days of the week)

Monday	lunes	All days are masculine.
Tuesday	martes	Hours are feminine.
Wednesday	miércoles	
Thursday	jueves	
Friday	viernes	
Saturday	sábado	
Sunday	domingo	

"On Monday" → el lunes

"On Tuesdays" → los martes

"for Wednesdays" → para el miércoles

PARA, POR, DE, A

Para ⇒ destination is implied: para Málaga  
 for Malaga

In time phrases: para el sábado, for Saturday

Por with parts of the day:

por la mañana / tarde → in the morning / afternoons  
 por la noche → at night

el jueves por la mañana → on Thursday morning



De

with parts of the day, when the time is specified:

Salí/Llega a las 3.00 de la tarde.

It leaves/arrives at 3 in the afternoon.

with salir (to leave)

Salí de Madrid a las 6.

It leaves Madrid at 6.

A with llegar (to arrive)

Llega a Sevilla a las 9.

While qué means what,  
que means that or which.

There is a train that leaves Freehold at noon.

Hay un tren que sale de Freehold al mediodía.

More numbers:

100	cien	1000	mil
101	ciento uno	2000	dos mil
200	doscientos	3500	tres mil quinientos
299	doscientos noventa y nueve	10000	diez mil
300	trescientos	100000	cien <del>mil</del> mil
400	cuatrocientos	1000000	un millón
500	quinientos	2000000	dos millones
600	seiscientos		
700	setecientos		
800	ochocientos		
900	novecientos		



# The Calendar

## El Calendario

(ask questions using  
Qué,Cuál,Cuántos)

29

January (enero) is the only month that does not look like ingles version.

el día → the day

el mes → the month

la semana → the week

el año → the year

los días de la semana:

el lunes, el martes, el miércoles, el jueves

el viernes, el sábado, el domingo

los meses del año:

1	enero	5	mayo	9	septiembre
2	febrero	6	junio	10	octubre
3	marzo	7	julio	11	noviembre
4	abril	8	agosto	12	diciembre

Qué día questions

¿Qué día es hoy? What day is today?

¿Qué día es mañana? What day <sup>is</sup> tomorrow?

¿Qué día fue ayer? What day ~~was~~ yesterday?

¿Qué día fue anteayer?

What day was the day before yesterday?

¿Qué día es pasado mañana?

What day is the day after tomorrow?



<sup>1st, 2nd, 3rd, 4th</sup>  
Don't use ORDINAL numbers. Dates take CARDINAL numbers  
except for the first of each month, it is

"EL PRIMERO DE" el primero de agosto  
(The first of) or el 10 de agosto

To say "in July", say "en julio"

On the Spanish calendar, lunes is the first day of the week.  
Miércoles looks as strange as Wednesday.

TGIV: FRIDAY = VIERNES

ON MONDAY → EL LUNES

ON MONDAYS → LOS LUNES

¿Cuál es la fecha? (What's the date?)  
The year is always read as one long number:

1999 = mil novecientos noventa y nueve  
1000 900 90 9

When giving the date, apply the reversal rule:

JUNE 3RD

el tres de junio

Do you work on Monday? → ¿Trabaja usted el lunes?

Ayer fue el \_\_\_\_\_ de \_\_\_\_\_.

Las estaciones (The Seasons)

HAY = "there is"  
= "there are"

la primavera

spring

el otoño

fall

el verano

summer

el invierno

winter



Más palabras importantes en el calendario :

el próximo → the next one

el pasado → the past one

actual → current

ahora → now ; nowadays

el aniversario → anniversary

la cita → appointment

diario → daily

la fiesta → party

el fin de semana → weekend

el horario → schedule

la junta → meeting

las vacaciones → vacation

NATI LEFT FREEHOLD/USA , TO MEXICO .

<sup>o</sup>  
pensar (e > ie) → to think

yo pienso , nosotros <sup>pensamos</sup> ~~piensas~~ , nosotras <sup>pensamos</sup> ~~piensas~~

tú piensas

usted } piensa  
el }  
ella }

ustedes } piensan  
ellos }  
ellas }

pienso	pensamos
piensas	pensamos
piensa	piensan



triste → sad

quiero  
quieres  
quiere

queremos  
queréis  
~~que~~ quieren

← irregular forms  
"boot" verbs

tener (to have)  
venir (to come)

random g's popping up  
in the yo-form

Puedo incluir más en esto como cambio,  
pero, para ahora, debo permanecer enfocado  
but for now "I must" stay focused  
y intentar comunicar mi mensaje a usted.  
try to communicate my message to you

Hago esto que puede ser que encuentre paz.  
find peace.  
"I do" this that



Dear Nati,

At some level I am aware that language is a human artifact. Yes, at some level, I am aware of how thoughts, ideas, and emotions are abstracted and expressed, first concept by concept, then word by word, letter by letter.

En un cierto nivel estoy enterado que la lengua es un artefacto humano. Sí, en un cierto nivel, estoy enterado cómo se abstraen y se expresan

los pensamientos, las ideas, y las emociones, del primer concepto por concepto, después palabra por palabra, letra por letra.

ii We struggle to approximate the original feelings and ideas into language, I may include more on this as an afterthought, but, for now, I must stay focused and try to communicate my message to you. I do this so that I might find peace.

Luchamos para aproximar las sensaciones y las ideas originales en lengua, sea lengua escrita, lengua hablada, o lengua del cuerpo. Puedo incluir más en esto como cambio;

I MAY INCLUDE MORE ON THIS HOW CHANGE?



iii So, words are all we have.  
Así pues, las palabras son todas lo que tenemos  
"So" words are all/total that we have

This is true and not true at the same time.  
Esto es verdad y no verdad en el mismo tiempo.

iv Paradox. Paradoja.

v The purpose of this letter is threefold.  
El propósito de esta letra es triple.

vi If I physically hand this textual message to you, I do so as to

1. apologize for my obsession with you,
2. say goodbye in case you should suddenly be gone, and
3. say hello to you with my whole heart and mind, just this once without restraint.



35

Si le doy físicamente este mensaje textual,  
hago esto para  
I do this in order to

1. disculparme por mi obsesión con usted,
2. la opinión adiós en caso de que le  
vayan repentinamente, y
3. la opinión hola a usted con mi  
corazón y mente enteros, apenas éste  
una vez sin alojamiento.

I am sure I have never come through that  
store on such a regular basis as I  
have over this past summer and  
autumn.

that store

Soy seguro que nunca he venido a través de  
ese almacén sobre una base regular tal que  
tengo excedente este últimos verano y  
otoño.

I confess to you that I think of you  
throughout the days and nights.  
For all this, I am sorry.

Confieso a usted que pienso en usted a  
través de los días y de las noches.  
Para toda el esto, estoy apesadumbrado.



ix

Please excuse me for sharing my feelings with you like this.

If I am foolish, I have to live with my mistakes.

Excúseme por favor para compartir más sensaciones con usted tienen gusto de usted.

Si soy absurdo, tengo que vivir con mis errores.

x I do not demand a response from you.  
No exijo una respuesta de usted.

"I do not demand" = "No exijo"  
"a response" = "una respuesta"  
"from you" = "de usted".

xi You can act as though I never said these things to you, and I will understand.

Usted puede actuar como si yo nunca <sup>never</sup> dicha estas cosas a usted, y yo <sup>I said</sup> entenderemos.

"these things"



XI-

I may be foolish, but I am wise enough not to be <sup>insulted or</sup> embarrassed by living honestly. I think for myself; I therefore, the only way I learn is by making mistakes.

Puedo ser absurdo, pero soy bastante sobrio  
 I may "to be"  
 no ser insultado o no desconcertado viviendo honesto. Pienso para me; por lo tanto, la única manera que aprendo está  
 the only way that I learn is  
 incurriendo en equivocaciones.  
 "by making mistakes".

XII

Even if by some miracle you were even slightly responsive to my presence in Freehold at this time, I would be in no position to follow my heart.

Incluso si por un cierto milagro usted fuera levemente responsivo uniforme a mi presencia aquí en Freehold <sup>slightly</sup> en este tiempo, estaría en ninguna posición para seguir mi corazón.

XIII

Obstacles surround me besides age and culture. I am a male with few resources — hence, my lonewolfishness.  
 Los obstáculos me rodean además de edad y de cultura. Soy un varón con pocos recursos, por lo tanto, mi wolfishness solitario.



XIV

While this saddens me, I want you to know that should I suddenly stop coming by the 6-12, and then return to I find you no longer work there, I will miss you on a very deep level, on a level deeper than language, culture, or age (having never had an opportunity to know you better due to obstacles mentioned).

Mientras que esto me entristece, quisiera que usted supiera que repentinamente paro el venir por el 6-12, y entonces la vuelta encontrarle ningún trabajo más largo allí, yo le faltará en un nivel muy profundo, en un más profundo llano que lengua, cultura, o la edad (nunca que tiene una oportunidad de conocerle mejor debido a los obstáculos mencionados).

XV

Giving you this letter will at least let me live in peace knowing I told you the effect you have on me.

Dando usted que esta letra me dejó por lo menos vivir en paz sabiendo le dije el efecto usted tiene en mí.

XVI

I hope never to annoy you, and I will try to stop thinking about you so much.

Nunca espero molestar le que, y me intentaré parar el pensar de usted tanto.



This way I can prevent appearing even more foolish than I actually am.

Esta manera que puedo evitar el aparecer aún más absurdo que mi realmente.  
"actually am"

xviii

I will most likely make my way through this life without reproducing because of my hatred for the wage-slavery economy. I wonder if I think too much to ever reproduce.

Haré muy probablemente mi manera con esta vida sin la reproducción debido a mi odio para la economía de la salario-esclavitud. Me pregunto si pienso demasiado para reproducirme siempre.

~~xx~~ xix Were I ever to surrender to a decent employer who paid me enough to provide for a wife and children, I would still be uncertain about subjecting my potential children to this existence of ours.

Estaba siempre a entregarse a un patrón decente que me pagó bastante para prever una esposa y niños, yo todavía sería incierto sobre sujetar a mis niños potenciales a esta existencia el nuestros.



xx I believe Nature has placed such matters into the hands and hearts of females. \$

Creo la naturaleza he puesto tales materias en las manos y los corazones de hembras.

Females will seek providers who will work very hard to support their offspring.  
This is the way it is.

Las hembras buscarán a abastecedores que trabajarán muy difícilmente para apoyar a su descendiente.

Esta es la manera que es.

If I had known you when I was 25, working for the State Park Service, living in my own house, and you as you are now, I believe I would have pursued your affections in spite of the obstacles and challenges.

Sí le hubiera conocido cuando era 25, trabajando para el servicio del parque de estado, viviendo en mi propia casa, y usted como usted ahora está, me creo habría perseguido su afecto a pesar de los desafíos.

A woman with the qualities you possess could have made all the difference in the world for me.  
Una mejor mujer con las calidades que usted posee habría podido diferenciar todo el en el mundo para



41

I will accept having learned lessons too late  
in life to make use of the knowledge  
gained from the mistakes I have made.

Aceptaré aprender lecciones demasiado tarde  
en vida para hacer uso el conocimiento  
ganado de los errores han hecho.

XXI

I may continue to be disturbed by the  
inner forces making me feel images  
of you, Nati, with my heart  
and mind; but I will endure  
these disturbances with joy while they last!

I may

Puedo continuar siendo disturbado por las  
fuerzas internas que me hacen imágenes de la  
sensación de usted, de Nati, con mi  
corazón y mente; ¡pero, aguantaré estos  
disturbios con alegría mientras que duran!

XXII

You see, Nati, I am an honest man very intimate  
with his own soul. Life is mysterious, and  
I trust my intuition. I know I like you  
very much. I need no counseling on the  
subject of my attraction to you.

Usted ve, Nati, yo es un hombre honesto muy íntimo  
con su propia alma. La vida es misteriosa, y  
confío en mi intuición. Me conozco tengo gusto  
de usted mucho. No necesito ningún asesoramiento  
a propósito de mi atracción a usted.



xxiii I know what I feel — the desire to know you better, to ask you questions — but I respect you. Should my desire annoy you, disgust you, or insult you in any way, you will let me know in a gentle way as you are kind to me. You have patience with me.

Sé lo que me siento — el deseo de conocerle mejor, para hacerle preguntas — pero le respeto. Si mi deseo le molesta, le disgusta, o le insulta de cualquier manera, usted me dejará saber de una manera apacible pues usted es bueno con mí. Usted tiene paciencia con mí.

xxiv Even though I have come to be an old, philosophical lone wolf, I am still quite alive, so my heart still scans all the time for a mate without me even being conscious of what is happening.

Aunque he venido ser un lobo solitario viejo, filosófico, todavía estoy absolutamente vivo, ~~donde~~ así que mi corazón todavía explora todo el tiempo para una compañera sin mí incluso que es consciente de qué está sucediendo.



Whoever and whatever I happen to be,  
I am drawn to you. Trust me,  
I am aware of how hard life is.  
Do not be afraid to be kind to me  
in fear of me misinterpreting this for  
attraction. If anything, I feel  
foolish for having gone thus far  
in my own mind with  
this Idea of You.

Whoever

Quienquiera y lo que sucedo ser, ~~me incluso~~  
me dibujan a usted. Confieme en,  
yo están enterado de cómo es la vida dura.  
No esté asustado ser bueno en el miedo  
de mí "misinterpreting" esto para la atracción.  
Si cualquier cosa, yo se siente absurdo  
para ir esto lejos en mi propia mente  
con esta idea de usted.

Life itself depends on us not knowing it too well.  
Existence is ~~weir~~ strange. Females are burdened  
with child rearing, and life is a long,  
hard struggle. Often the most precious  
relations are stressed and destroyed by  
money problems, emotional health problems, etc.

La vida sí mismo depende de nosotros que no lo  
saben demasiado bien. La existencia es extraña.  
Cargan a las hembras con el niño que se alza,  
y la vida es una lucha larga, dura.  
Las relaciones más preciosas se tensionan  
a menudo y destruido por problemas de  
dinero, los problemas de salud emocionales, etc.,



XXV

You will mother children, Nati. I see you have the Presence of Mind to become a loving mother and even a wise old grandmother. Your family adores you. I can tell.

Do not worry about me.

I am not your problem.

I will police my own desires with a cold, stern, Germanic philosophy.

Usted servirá de madre a los niños, Nati. Le veo tener la presencia de la mente a hacer una madre cariñosa e incluso una vieja abuela sabia. Su familia le adora. Puedo decir.

No se preocupe de mí.

No soy su problema.

Limpidré mis propios deseos con una filosofía fría, severa, germánica.

XXVI

What are consequences to following through with my intentions to communicate these things to you?

I hope to make peace with my heart so that it will stop tormenting me.

¿Cuáles son ~~conseq~~ consecuencias al siguiente a través con mis intenciones de comunicar estas cosas a usted?

Espero hacer las paces con mi corazón de modo que para el "tormenting" de mí.



I expect to feel foolish; but, in the end, aren't we all just doing the best we can to make sense of our inner experiences, the ones we cannot transform into words or sounds?

Espero sentirme absurdo; ¿pero, en el extremo, no sea nosotros todos apenas que hacen el mejor nosotros lata para tener sentido de nuestras experiencias internas, las que no podemos transformar en palabras o sonidos?

Must I respect common sense, or am I capable of thinking for myself?

¿Debo respetar sentido común, o soy capaz del pensamiento para mí?

Common sense tells me to keep all my feelings to myself. Why bother people with what I feel? My heart-mind-body rejects common sense. Sorry if this letter upsets you. Sometimes I do very stupid things.

El sentido común me dice guardar todas mis sensaciones a mí. ¿Por qué gente de la incomodidad con lo que me siento? Mi corazón-mente-cuerpo rechaza sentido común. Apesadumbrado si esta letra le trastorna. Hago a veces cosas muy estúpidas.



XXIX

I am doing my best to talk myself through it, I'm trying to "kill" my true desires with the power of reason:  
"It is best to respect Nati.  
Respect Nati by expressing my attraction to her while restraining my heart with common sense & knowledge of my inability to provide her with what she, herself, desires."

Estoy haciendo mi mejor para hablarme con él, intentando con él matanza mis deseos verdaderos con la energía de la razón:

"Es el mejor que respetar Nati.

Respete Nati expresándole mi atracción mientras que refrena mi corazón con conocimiento del sentido común de mi inhabilidad de proveer de ella lo que ella, ella misma, desea."

XXX

Accepting this, I am able to respect you and continue to be kind to you without being too hurt by a sense of rejection that I will heal eventually.

Aceptando esto, puedo respetarle y continuar siendo bueno con usted sin también ser lastimado por un sentido del rechazamiento que cure eventual.



xxxI It all equals out in the end, and whatever  
will be, will be. Continue to be strong.  
I do not blame you for my frustrations.  
Since we human beings are complex  
creatures, our problems do not always have  
simple solutions.

Todo iguala hacia fuera en el extremo, y  
lo que la voluntad, sea será. Continúe  
siendo fuerte. No le culpo por mis  
frustraciones. Puesto que los seres humanos  
somos criaturas complejas, nuestros  
problemas no tienen siempre soluciones  
simples.

xxxII Rather than do as most people do  
(ignore their feelings), I am  
exposing ~~expressing~~ my feelings to you now.

Why not? Am I hurting you in any way  
expressing to you that I  
daydream I images of you?

Más bien que haga como lo hace la mayoría de  
la gente (no haga caso de las sensaciones  
internas), yo ahora están exponiendo  
mis sensaciones a usted.

¿ Por qué no? ¿ Soy que le lastima de  
manera que le expresa expresa que yo  
sueñan despierto imágenes de usted?



XXXIII I must respond to my inner life, or  
else I would go insane.  
I would get stuck in a rut,  
an endless loop.

Debo responder a mi vida interna, o bien  
iría insano. Conseguiría pegado en una  
rodera, un lazo sin fin.

XXXIV Now I hope to go in peace,  
restrain my heart, and police my own  
actions.

Ahora espero entrar en paz, refreno mi corazón,  
y limpio mis propias acciones.

Now that I have exposed my truest self to you,  
there is a chance I might stay away  
from the 6-12 due to my  
being as shy as a wolf.

Ahora que he expuesto a mi uno mismo más verdadero  
a usted, hay una ocasión que puede  
ser que permanezca lejos del 6-12 debido  
a mi ser tan tímido como un lobo.

When the world pokes me with a stick, I would  
rather go my own way than bite someone  
due to my own confused state after having  
been poked with a stick.



Cuando el mundo me empuja con un palillo,  
iría algo mi propia manera que alguien  
debido a mi propia estado confuso que es  
empujado después con un palillo.

We shall see.

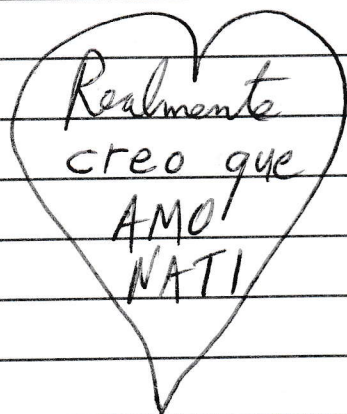
Veremos.

Michael Kentuck "Gorticide" → <http://www.gortbusters.org>

post scriptum: As a small gift, to make up  
for me troubling you with my feelings,  
I have included some information about  
the roots of your name, Nati.

I don't think I will get around to  
translating it before ~~hand~~ delivering  
this I hand-written message to you.

ps → Como regalo pequeño, compensarme que  
le preocupaba con mis sensaciones,  
he incluido una cierta información  
sobre las raíces de su nombre, Nati.



Me creo estoy en  
amor con Nati.



poetry  
part

# THE OTHER WORLD WITHIN V. SCRATCH PAD

In here where wishes flow free I hold beautiful Nati' close to me  
Words charged with ~~the~~ ~~the~~ bitter-sweet passion and urgency  
In here where invisible fires blaze  
where those who follow the Old Religion  
come to worship moon, sun, and winds  
In here, I am one fire for ~~the~~ her voice,  
for her song, for her breath.

As this business-as-usual world makes a headlong haste  
towards planetary destruction,  
I embrace her I with my all mighty spirit  
The pace set by ruthless economic ethics  
promises nothing but more polluted waters, ~~and~~  
fouler air,  
~~less~~ dead birds  
more toxic soil...

While my spirit cries out for us all  
I still have a very specific heartache  
She is the focus of my songs, dreams, prayers,  
I hold her close to me with <sup>the</sup> arms of gods  
She dwells with me in the timeless heart of Valhalla  
Ancient Queen, Eternal Goddess **VALHALLA**  
The spark in her eyes reveals the presence of the real

Aint nothin' like the real thing, baby { page 51 }  
Aint nothin' like the real I thing { here }

I am concerned with the natural world  
I am concerned with the world of the spirit



2003 280 = 7 OCTOBER

$h^2$   
 $h_0$

(My inner life is so very rich. My soul's journey is really no one else's business. If I find the business-as-usual work ethics just too much crap to have patience for, if I am wise to the greedy little men and their war machine economy, their military-industrial-prison-complex, then I can, WITH REVERENCE FOR MY TRUE FEELINGS, choose to live minimalistically while collecting some small amount of social security income.

Like living inside a source code file being compiled, I keep dealing with errors and warnings until the executable file is created with no LOGIC ERRORS.

One logic error with my Obsession With Nati was that I refused to acknowledge how emotionally detached she has been just perhaps NOTHING THAT IS SO, IS SO. and I play some kind of role in Nati's soul's development. We are in the Earth school, and I may be some kind of link in her soul's journey. No coincidences. I am no mere bum/addict - but some kind of underground journalist / GHOST WRITER - a real hero. LOCAL ANTI-HERO.

I am sure Joe Fifi can sing with as much soul as Bruce Springsteen, and I believe in the instantaneous power of my songs sung to the open sky at night in SOLITUDE.

With the hex' series complete, I still do not want to pause to look back, but I may look for occult/German stuff from Old Journals.



Vonnegut wrote, "The whole planet faces a problem far worse than the rise of another Hitler, which is the destruction of the planet as a life-supporting apparatus of delicate and beautiful complexity."

"The forces of Beelzebub are waging racist and classist political campaigns, and taking over and liquidating businesses and natural resources, and looting pension funds, insurance companies, and savings banks, and putting a greater percentage of our citizens in jails and prisons than even the Soviet Union or The Republic of South Africa."

"Some beacons of liberty we are to the rest of the world!"

"Having nothing left to lose frees people to think their own thoughts, since there is no longer anything to be gained by echoing the thoughts of those around them."

"Hopelessness is the mother of Originality."

"The granddaughter of Originality is an unshakable self-respect."

So, be reverent towards your own inner feelings.

Religion:

The original Europeans, the Teutonic Tribes of Ancient Germany were peoples of the forests who were colonized and de-spiritualized by Christianity's superior weaponry.

Colonized peoples transformed into peasants have been controlled through <sup>(economic)</sup> confusion throughout history by the same very same external powers that currently threaten all life on this planet!

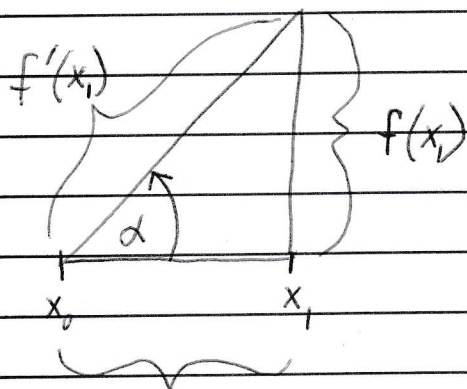


# MEDITATIONS

From 1994 (Jay Deshabandu)

$$f'(x_1) = \tan \alpha = \frac{\text{opp}}{\text{adj}} = \frac{\sin \alpha}{\cos \alpha} = \frac{f(x_1) - f(x_0)}{\Delta x}$$

$$= \frac{f(x_1)}{|x_1 - x_0|}$$



$$x_0 = x_1 - \frac{f(x_1)}{f'(x_1)}$$

$$\Delta x = \frac{f(x_1)}{\tan \alpha}$$

$$\Delta x = |x_1 - x_0|$$

Notice that  $\tan \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{\left( \frac{f(x_1)}{f'(x_1)} = \frac{\text{opp}}{\text{hyp}} \right)}{\left( \frac{|x_1 - x_0|}{f'(x_1)} = \frac{\text{adj}}{\text{hyp}} \right)} = \frac{f(x_1)}{|x_1 - x_0|} = \frac{\text{opp}}{\text{adj}}$

and  $\tan \alpha = f'(x_1)$

Since  $f'(x_1) = \frac{f(x_1)}{|x_1 - x_0|}$ ,  $\frac{f'(x_1)}{f(x_1)} = \frac{1}{|x_1 - x_0|}$

$$|x_1 - x_0| = \frac{f(x_1)}{f'(x_1)}$$

$$x_0 = x_1 - \frac{f(x_1)}{f'(x_1)}$$